

Chapter 8 - Chemical Emergency Management

1.0 Introduction

This document identifies and consolidates existing user safety and health requirements found in Federal regulations and National Standards that address emergency management for facilities with activities involving **chemicals** (see def.) and **chemical products** (see def.). It specifically consolidates requirements found in 29CFR1910.38, 29CFR1910.119, 29CFR1910.120, 29CFR1910.1200, 29CFR1910.1450, 40CFR355, 40CFR68, NFPA 471, 472, & 1620, and DOE Order 151.1A.

This document is intended only to consolidate currently existing, overlapping and/or duplicative chemical-related safety and health requirements. This listing of consolidated requirements includes “pointers” to the sources of those requirements, showing the user what the requirements are and where each comes from. It does not create any new requirements.

2.0 Applicability

2.1 This document applies to all locations that use chemicals or chemical products. *[NOTE: Throughout this document, the term “chemicals” is used to indicate chemicals and/or chemical products as described in Section 3, below.]*

2.2 DOE Order 151.1A - DOE O 151.1A establishes requirements for Comprehensive Emergency Management Systems for the Department and for contractors except for:

- the facilities and activities of the Naval Nuclear Propulsion Program and the Power Marketing Administrations.
- all DOE and National Nuclear Security Administration NNSA facilities subject to Nuclear Regulatory Commission (NRC) license requirements.

2.3 Hazardous Waste Operations and Emergency Response (HAZWOPER) 29CFR 1910.120(q) - Emergency response program for hazardous substance releases. Section 1910.120(q) covers employers whose employees are engaged in emergency response no matter where it occurs.

2.4 Process Safety Management (PSM) 29CFR1910.119 – requires emergency action plan for processes involving chemicals at or above specified threshold quantities.

2.5 Emergency Planning and Community Right-to-Know Act (EPCRA) 40CFR355 - requires emergency action plan for processes involving chemicals at or above specified threshold quantities.

2.6 Chemical Accident Prevention Provisions 40CFR68 - requires emergency action plan for facilities with chemicals at or above specified threshold quantities.

3.0 Definitions and Acronyms

CERCLA: the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (also known as “Superfund”), as amended.

CERCLA Hazardous Substance: a substance on the list defined in section 101(14) of CERCLA.

CFR: Code of Federal Regulations

Chemical: Any element, compound or mixture of elements and/or compounds. A substance that a) possesses hazardous properties (including, but not limited to flammability, toxicity, corrosivity, reactivity); b) is included on any federal, state, or local agency list of regulated chemicals; or c) is associated with Material Safety Data Sheets (MSDS). For the purpose of this document this definition also applies to **chemical products** (see def.)

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Chemical Product: A mixture of any combination of two or more chemicals (see def.) that may or may not be the result, in whole or in part, of a chemical reaction, and that itself has hazardous properties. Chemical products include materials such as paints, lubricants, cleaning agents, fuels, etc. and will have MSDSs associated with them.

Commission: the emergency response commission for the State in which the facility is located or the Indian Tribe under whose jurisdiction the facility is located. In the absence of an Emergency Response Commission, the Governor and the chief executive officer, respectively, shall be the commission. Where there is a cooperative agreement between a State and a Tribe, the commission shall be the entity identified in the agreement.

Committee or Local emergency planning committee (LEPC): the local emergency planning committee appointed by the emergency response commission.

Decontamination: the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of the foreseeable adverse health effects.

Environment: includes water, air, and land and the interrelationship that exists among and between water, air, and land and all living things.

Extremely hazardous substance: a substance listed in appendices A and B of 40CFR355.

First Responders-Awareness Level: individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They are temporarily in command of the incident until the Incident Commander (IC) arrives. They would take no further action beyond notifying the authorities of the release.

First Responders-Operations Level: individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures.

Foreseeable Emergency: any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

Hazardous Materials Branch Officer: responsible for directing and coordinating all hazardous materials operations assigned by the incident commander.

Hazardous Materials Specialists: individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician; however, those duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist also serves as the site liaison with Federal, state, local and other government authorities as regards site activities.

Hazardous Materials Technicians: individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance.

Hazardous Substance: For the purposes of this document, as defined in 29CFR1910.120: "...A) any substance defined under section 101(14) of CERCLA; B) any biologic agent and other disease causing agent which after release into the environment and upon exposure by ingestion, inhalation, or assimilation by any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation,

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physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring; C) any substance listed by the U.S. Department of Transportation as hazardous materials under 49CFR172.101 and appendices; and D) hazardous waste either as a waste or combination of wastes as defined in 40CFR261.3, or those substances defined as hazardous wastes in 49CFR171.8....”

HAZMAT: hazardous materials.

IC: Incident Commander

ICS: incident command system.

Incident Commander: assumes control of the incident scene.

LEPC: local emergency planning committee

MSDS: Material Data Safety Sheet

NFPA: National Fire Protection Association.

NRC: Nuclear Regulatory Commission.

Operational Emergencies: include the spectrum of significant emergency events or conditions that involve or affect facilities and activities by causing or having the potential to cause serious health and safety impacts onsite or offsite to workers or the public, serious detrimental effects on the environment, direct harm to people or the environment as a result or degradation of security or safeguards conditions or release (or loss of control) of hazardous materials.

PPE: personal protective equipment including protective clothing.

Release: any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any chemical, extremely hazardous substance, or CERCLA hazardous substance.

Safety Officer (designated as Hazardous Materials Branch Safety Officer in NFPA regulations): ensures that recognized safe practices are followed and provides other technical safety advice as needed.

SARA: Superfund Amendments and Reauthorization Act of 1986.

Superfund or Superfund Act: common name for CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended).

Threshold planning quantity (TPQ): the minimum amount of a substance present at a site at which notification is required under 40CFR355. TPQs are listed in appendices A and B of that regulation.

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4.0 Requirements

Sources	Consolidated Requirements
<p>29CFR1910.38(a); 29CFR1910.119(n); 29CFR1910.120(q) DOE O 151.1A, DOE O151.1A, Chapter XI, 3 & 4 40CFR68.95(b)</p> <p>DOE O151.1A, Chapter III, 3.a</p>	<p>4.1 Emergency response plan - An emergency response plan shall be prepared which documents the emergency management program and the implementation procedures to handle anticipated emergencies, including operational emergencies, prior to the commencement of emergency response operations.</p> <p>4.1.1 The plan shall include procedures for handling releases and shall be in writing and available for inspection and copying by employees, their representatives, and, where applicable, OSHA personnel.</p> <p>4.1.2 The plan shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.</p> <p>4.1.3 A hazards survey (i.e., qualitative examination) shall be used to identify the conditions to be addressed by the comprehensive emergency management program. Much of the hazards survey should already have been done in the course of meeting other DOE and Federal agency requirements.</p>
<p>29CFR1910.120 (q)(2) 29CFR1910.38(a) NFPA, Chapter 4¹ DOE O151.1A, Chapter III, 3.c(2) NFPA 1620³</p> <p>NFPA 471, Section 4-4 DOE O151.1A, Chapter III, 3.c(1)</p> <p>NFPA 471, Chapter 3 DOE O151.1A, Chapter III, 3.c(3)</p> <p>DOE O151.1A, Chapter III, 5.a(1)</p>	<p>4.1.4 Elements of an emergency response plan² - The emergency response shall address, as a minimum, the following areas:</p> <ul style="list-style-type: none"> • Pre-emergency planning and coordination with outside parties such as State, Tribal, and local agencies. • Personnel roles including Incident Commander, lines of authority, training/competencies, and internal communications (See NFPA 471, Section 4-4 for more detailed requirements for internal communications.) • Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan [1910.38(a)]. • Emergency recognition including criteria for quickly determining if an event is an Operational Emergency, response levels (See NFPA 471, Chapter 3 for more detailed requirements), and prevention. • Emergency shutdown procedures and responsibilities [1910.38(a)]. • Re-entry planning shall include contingency planning to ensure the safety of re-entry personnel, such as planning for the rescue of re-entry teams. • Continued operation of critical plant functions [1910.38(a)]. • Safe distances and places of refuge. • Site security and control. • Evacuation routes and procedures including accounting for all employees after the emergency evacuation has been completed [1910.38(a)].

¹ NFPA 471, Chapter 4 requires site safety considerations including a personnel accountability system, provisions for rest and rehabilitation for responders, the elimination of all ignition sources, and the application of control zones.

² Emergency response organizations may use the local emergency response plan or the state emergency response plan or both, as part of their emergency response plan to avoid duplication. Those items of the emergency response plan that are being properly addressed in the SARA Title III plans may be included in the emergency response plan, or otherwise made available to employees.

³ NFPA 1620 provides extensive details on pre-incident planning that involves the evaluation of protection systems, building construction, contents, and operating procedures that can impact emergency operations. Major topics include physical elements and site considerations, occupant considerations, protection systems and water supplies, special hazard considerations, emergency operations, and plan testing and maintenance.

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<p>DOE O151.1A, Chapter III, 3.c(5)</p> <p>NFPA 471, Chapter 7</p> <p>DOE O151.1A, Chapter III, 3.c(4) 40CFR68.95(a)(1)(i)</p> <p>DOE O151.1A, Chapter IV, 1-4</p>	<ul style="list-style-type: none"> • Decontamination (See NFPA 471, Chapter 7 for more detailed requirements). • Rescue and Emergency medical treatment and first aid [1910.38(a)]. • Emergency alerting, reporting and response procedures [1910.38(a)] including prompt initial notification of workers, emergency response personnel, and response organizations, including DOE elements and State, Tribal, local organizations, and the public with continued effective communications throughout emergency as part of a pre-established Emergency Public Information Program. • PPE and emergency equipment.
<p>29CFR1910.38(a)(5)(ii) A,B,C 40CFR68.95(a)(4)</p>	<p>4.1.5 Plan Review - The employer shall review the plan with each employee covered by the plan when the plan is developed; whenever the employee's responsibilities or designated actions under the plan change; and whenever the plan is changed.</p>
<p>29CFR1910.38(a)(5)(iii)</p>	<p>4.1.6 Posting :</p> <p>4.1.6.1 The written plan shall be kept at the workplace and made available for employee review.</p>
<p>29CFR1910.1200</p>	<p>4.1.6.2 Material Safety data Sheets (MSDS) shall contain emergency procedures.</p>
<p>40CFR68.95 (a)(3) DOE O151.1A, Chapter III, 4.a</p> <p>29CFR1910.120(q)(6) 29CFR1200(h)(3)(iii); 29CFR1450(f)(4)(i)(C)</p>	<p>4.2 Training</p> <ul style="list-style-type: none"> • Training and other emergency information on site-specific conditions and hazards shall be made available to offsite personnel who may be required to participate in response to an emergency at the DOE or NNSA site/facility. • To ensure the competencies of all responders, training shall be based on the duties and function to be performed by each responder of an emergency response organization. The skill and knowledge levels required for all new responders shall be conveyed to them through training before they are permitted to take part in actual emergency response to an incident. Employees who participate, or who are expected to participate, in emergency response, shall be trained as described

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	below.
29CFR1910.120(q)(6)(i) NFPA 472, Chapter 2 ⁴	<p>4.2.1 First Responder – Awareness Level (See definition, Section 3 above, for definitions of this and other levels of emergency personnel). Shall have sufficient training, or have had sufficient experience to objectively demonstrate competencies that include, but are not limited to:</p> <ul style="list-style-type: none"> • An understanding of what hazardous substances are, and the risks associated with them in an incident. • An understanding of the potential outcomes associated with an emergency created when hazardous substances are present. • The ability to recognize the presence of hazardous substances in an emergency. • The ability to identify the hazardous substances. • An understanding of the role of the first responder awareness individual in the employer's emergency response plan including site security and control and the U.S. Department of Transportation's Emergency Response Guidebook. • The ability to realize the need for additional resources, and to make appropriate notifications to the incident response communication center.
29CFR1910.120(q)(6)(i) NFPA 472, Chapter 3 ⁵	<p>4.2.2 First Responder -Operations Level. In addition to the competencies listed for the awareness level, the employer shall certify that the first responders at the operational level have received at least eight hours of training or have had sufficient experience to objectively demonstrate competencies that include, but are not limited to:</p> <ul style="list-style-type: none"> • Knowledge of the basic hazard and risk assessment techniques. • Know how to select and use proper personal protective equipment provided to the first responder operational level. • An understanding of basic hazardous materials terms. • Know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit. • Know how to implement basic decontamination procedures. • An understanding of the relevant standard operating procedures and termination procedures.
29CFR1910.120(q)(6) (iii) NFPA 472, Chapter 4 ⁶	<p>4.2.3 Hazardous Materials Technician - The employer shall certify that the hazardous materials technicians have received at least 24 hours of training equal to the first responder operations level and in addition have competencies including, but not limited to:</p> <ul style="list-style-type: none"> • Knowing how to implement the employer's emergency response plan. • Knowing the classification, identification and verification of known and unknown materials by using field survey instruments and equipment. • Being able to function within an assigned role in the Incident Command System. • Knowing how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician. • Understanding hazard and risk assessment techniques. • Being able to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit. • Understanding and being able to implement decontamination procedures. • Understand termination procedures.

⁴ Details on these and other required competencies are found in NFPA 472, Chapter 2.

⁵ Details on these and other required competencies are found in NFPA 472, Chapter 3.

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	<ul style="list-style-type: none"> Understanding basic chemical and toxicological terminology and behavior.
29CFR1910.120(q)(6)	<p>4.2.4 Hazardous materials specialists shall have received at least 24 hours of training equal to the technician level and in addition have competency in the following areas and the employer shall so certify:</p> <ul style="list-style-type: none"> Know how to implement the local emergency response plan. Understand classification, identification and verification of known and unknown materials by using advanced survey instruments and equipment. Know the state emergency response plan. Be able to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist. Understand in-depth hazard and risk techniques. Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available. Be able to determine and implement decontamination procedures. Have the ability to develop a site safety and control plan. Understand chemical, radiological and toxicological terminology and behavior.
NFPA 472, Chapter 7	<p>4.2.5 Hazardous materials branch officer must demonstrate competencies including, but not limited to:</p> <ul style="list-style-type: none"> Ability to analyze the magnitude of the problem and estimate the potential outcomes. Know how to plan a response taking into account the abilities of the available personnel and equipment. Ability to implement a response that will improve the outcomes consistent with standard operating procedures and the local emergency response plan. Know how to evaluate the on-going progress of the plan implementation and to adjust the plan accordingly. Know how and when to terminate the incident including, critiques, debriefings, and reports.
NFPA 472, Chapter 8	<p>4.2.6 Safety officer (also known as Hazardous Materials Branch Safety Officer in NFPA) must demonstrate competencies including, but not limited to the ability to:</p> <ul style="list-style-type: none"> Determine the magnitude of the safety problems involved in the incident. Identify the safety considerations for the response plan. Monitor the safety of personnel involved in the response. Evaluate the progress of the plan implementation as to deviations from safety considerations. Upon incident termination provide reports, debriefings, and critique of safety.
29CFR1910.120(q)(6) NFPA 472, Chapter 5 ⁷	<p>4.2.7 Incident commander - The employer shall certify that the incident commanders have received at least 24 hours of training equal to the first responder operations level and, in addition, have competencies including, but not limited to:</p> <ul style="list-style-type: none"> Know and be able to implement the employer's incident command system. Know how to implement the employer's emergency response plan. Know and understand the hazards and risks associated with employees working in chemical protective clothing. Know how to implement the local emergency response plan.

⁶ Details on these and other required competencies are found in NFPA 472, Chapter 4.

⁷ Details on these and other required competencies are found in NFPA 472, Chapter 5.

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	<ul style="list-style-type: none"> Know of the state emergency response plan and of the Federal Regional Response Team. Know and understand the importance of decontamination procedures.
29CFR1910.120 (q)(4) NFPA 472, Chapters 9, 10, 11 ⁸	4.2.8 Skilled support personnel shall be given an initial briefing at the site prior to their participation in any emergency response. The initial briefing shall include instruction in the wearing of appropriate personal protective equipment, what chemical hazards are involved, and what duties are to be performed. All other appropriate safety and health precautions provided to the employer's own employees shall be used to assure the safety and health of these personnel.
29CFR38(a)(5)(i) DOE O151.1A, Chapter III, 4a DOE O151.1A, Chapter IV, 4a 29CFR120 (q)(6)	<p>4.2.9 Employee Protection Training and Drills</p> <p>4.2.9.1 Employee information, training, and drills shall include measures employees can take to protect themselves from exposure to chemicals in emergencies, including specific emergency procedures the employer has implemented to protect employees. This training is required when they are employed, when their expected actions change, or when the emergency plan changes.</p> <p>4.2.9.2 Drills shall provide supervised, "hands-on" training for members of emergency response organizations.</p> <p>4.2.9.3 Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.</p>
29CFR1910.120 (q)(7)	<p>4.2.10 Trainers shall have either:</p> <ul style="list-style-type: none"> Satisfactorily completed a training course for teaching the subjects they are expected to teach, such as the courses offered by the U.S. National Fire Academy, OR, the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills and a good command of the subject matter of the courses they are to teach.
29CFR1910.120 (q)(8) 29CFR1910.120 (q)(8) DOE O151.1A, Chapter IV, 4a 29CFR1910.120 (q)(8)	<p>4.2.11 Refresher training</p> <p>4.2.11.1 Those employees who are trained in accordance with paragraph 4.2 of this chapter shall receive annual refresher training of sufficient content and duration to maintain their competencies, or shall demonstrate competency in those areas at least yearly.</p> <p>4.2.11.2 A statement shall be made of the training (and retraining) or competency, and if a statement of competency is made, the employer shall keep a record of the methodology used to demonstrate competency.</p>
DOE O151.1A, Chapter III, 4.b	<p>4.2.12 Exercises</p> <ul style="list-style-type: none"> At a minimum, each site/facility shall conduct building evacuation exercises consistent with Federal regulations [e.g., 41 CFR 101-20.105-1(c)(1)], local ordinances, or National Fire Protection Association Standards. Exercises shall be conducted as often as needed to ensure that employees are able to safely evacuate their work area. For each site or facility, as applicable, the organization responsible for communications with DOE Headquarters, operations/field offices, and offsite agencies shall test communications systems at least annually or as often as

⁸ NFPA 472 identifies three such skilled support personnel and specifies, in detail, their required competencies: 1) tank car specialist (Chapter 9), 2) cargo tank specialist (Chapter 10), and 3) intermodal tank specialist (Chapter 11). In general, they must be able to analyze the incident, plan the response, and implement the plan.

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	needed to ensure that communications systems are operational.
DOE O 151.1A, Attachment 1, #1	4.3 Implementation – A comprehensive emergency management plan, commensurate With the hazards present, shall be implemented at the site/facility/activity level.
DOE O151.1A, Attachment 1, #9 NFPA 471, Chapter 6 ¹² NFPA 471, Chapter 4 ¹³	4.3.1 Ensure immediate mitigative and corrective emergency response actions and appropriate protective actions to minimize the consequences of the emergency, protect worker and public health and safety, provide security, and ensure the continuance of such actions until the emergency is declared terminated.
29CFR1910.120 (q)(3) (i) DOE O151.1A, Chapter III, 3.c(1)	4.3.2 The senior emergency response official responding to an emergency shall become the Incident Commander (IC). All emergency responders and their communications shall be coordinated and controlled through the IC assisted by the senior official present or by each employer.
29CFR1910.120 (q)(3) (ii) and (iii)	4.3.3 The IC shall identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures, and use of any new technologies. The IC shall also implement appropriate emergency operations and assure that the personal protective equipment worn is appropriate for the hazards encountered.
29CFR1910.120 (q)(3) (iv)	4.3.4 Employees engaged in emergency response and exposed to hazardous substances, which present an inhalation hazard or potential inhalation hazard, shall wear positive pressure self-contained breathing apparatus while engaged in emergency response, until such time that the IC determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.
DOE O151.1A, Chapter III, 5.a (1)	4.3.5 All individuals involved in re-entry shall receive a hazards/safety briefing prior to emergency response activities consistent with Federal, State, and local laws and regulations.
29CFR1910.120 (q)(3) (v)	4.3.6 The IC shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two or more.
29CFR1910.120 (q)(3) (vi)	4.3.7 Back-up personnel shall be standing by with equipment ready to provide assistance or rescue. Qualified basic life support personnel, as a minimum, shall also be standing by with medical equipment and transportation capability.
29CFR1910.120 (q)(3) (vii)	4.3.8 The IC shall designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.
29CFR1910.120(q)(3) (viii)	4.3.9 When activities are judged by the safety officer to be an IDLH (immediate danger in life or health) and/or to involve an imminent danger condition, the safety officer shall have the authority to alter, suspend, or terminate those activities. The safety official shall immediately inform the IC of any actions needed to be taken to correct these hazards at the emergency scene.
29CFR1910.120 (q)(3) (x)	4.3.10 When deemed necessary by the safety officer for meeting the tasks at hand, approved self-contained compressed air breathing apparatus may be used with

¹² NFPA 471, Chapter 6, has details on numerous physical and chemical means of mitigating the incident.

¹³ Also see NFPA 471, Chapter 4, for site safety requirements during an emergency.

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	approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet U.S. Department of Transportation (USDOT) and National Institute for Occupational Safety and Health (NIOSH) criteria.
40CFR355.40(b)(1) DOE O151.1A, Chapter III, 3.c(5)	4.3.11 In addition, if extremely hazardous chemicals are released, the owner or operator of a facility subject to this section shall immediately notify the community emergency coordinator for the LEPC of any area likely to be affected by the release and the State emergency response commission of any State likely to be affected by the release. If there is no LEPC, notification shall be provided under this section to relevant local emergency response personnel (LERP).
40CFR355.40(b)(4)(ii)	Exception: An owner or operator of a facility from which there is a transportation-related release may meet the requirements of this section by providing the information indicated below in paragraph 4.3.11.1 to the 911 operator, or in the absence of a 911 emergency telephone number, to the telephone operator. A transportation-related release means a release during transportation, or storage incident to transportation if the stored substance is moving under active shipping papers and has not reached the ultimate consignee.
40CFR355.40(b)(2)	4.3.11.1 The notice required under this section shall include the following to the extent known at the time of notification and so long as no delay in notification of emergency response results: <ul style="list-style-type: none"> a) The chemical name or identity of any substance involved in the release. b) An indication of whether the substance is an extremely hazardous substance. c) An estimate of the quantity of any such substance that was released into the environment. d) The time and duration of the release. e) The medium or media into which the release occurred. f) Any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals. g) Proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordination pursuant to the emergency plan). h) The names and telephone number of the person or persons to be contacted for further information.
40CFR355.40(b)(3)	4.3.11.2 As soon as practicable after a release which requires notification under 4.3.11 herein, such owner or operator shall provide a written follow-up emergency notice (or notices, as more information becomes available) setting forth and updating the information required under paragraph 4.3.11.1 of this section, and including additional information with respect to: <ul style="list-style-type: none"> a) Actions taken to respond to and contain the release, b) Any known or anticipated acute or chronic health risks associated with the release, and, c) Where appropriate, advice regarding medical attention necessary for exposed individuals.
DOE O151.1A, Chapter IV, 4.b-4.i	4.3.12 Public Information <ul style="list-style-type: none"> • During the response phase of an emergency, shall cooperatively ensure that an adequate public information program is established and maintained,

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	<p>commensurate with site hazards, to ensure that information can be provided to the public and the media during an emergency. The emergency public information program shall be adequately staffed with personnel trained to serve as spokesperson and news writer, and to provide support in media services, public inquiry, media inquiry, Joint Information Center management and administrative activities, and media monitoring. Persons with technical expertise about the emergency and with spokesperson training shall also be assigned to the emergency public information staff.</p> <ul style="list-style-type: none"> • In situations involving classified information, the Department will provide sufficient unclassified information to explain the emergency response and protective actions required for the health and safety of workers and the public. • An information officer shall be assigned to the emergency public information response team involved in a significant offsite response deployment • A Headquarters official or team shall provide support to the affected Program Offices/ Emergency Management Team and/or requesting operations/field office, as appropriate. • The Director of Public Affairs and the Headquarters Emergency Manager shall be informed of all DOE or NNSA emergency public information actions • Initial news releases or public statements shall be approved by the DOE or NNSA official responsible for emergency public information review and dissemination. Following initial news releases and public statements, updates shall be coordinated with the Director of Public Affairs. • An emergency public information communications system shall be established among Headquarters, operations/field office, and on-scene locations.
<p>DOE 0151.1A, Chapter IV 29CFR 1910.119 40CFR 68.130 40CFR 355</p>	<p>4.4 Additional Requirements for Significant Quantities of Hazardous Chemicals - The Operational Emergency Hazardous Material Program adds to the base program. Depending on the findings of the hazards survey DOE or NNSA sites/facilities may be required to establish and maintain a quantitative hazards assessment, which will be used to define the provisions of the Operational Emergency Hazardous Material Program to ensure the program is commensurate with the hazards identified. Such hazards assessments are required if the hazard survey identifies hazardous materials in quantities exceeding the lower of the Threshold Quantities listed in 29 CFR 1910.119, or 40 CFR 68.130, or 40 CFR 355.</p>
<p>DOE 0151.1A, Chapter IV, 3b(2);5a</p>	<p>4.4.1 Emergency Classification – Provisions shall be established to categorize and classify emergency events. Events shall be classified on the basis of potential severity of the consequences as detailed in Chapter IV of DOE O151.1A.</p>

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<p>40CFR355.30 DOE 0232.1A 40CFR355.30(a) DOE O151.1A, Chapter III, 3c(2)</p> <p>40CFR355.30(c) 40CFR68.12(b)(3)</p> <p>40CFR355.30(d)(1)</p>	<p>4.4.2 Emergency Planning Notification</p> <p>4.4.2.1 The owner or operator of a facility subject to this section shall notify the Commission that it is a facility subject to the emergency planning Requirements of this part. Such notification shall be within sixty days after a facility first becomes subject to the requirements of this section, whichever is later.</p> <p>4.4.2.2 The owner or operator of a facility subject to this section shall designate a facility representative who will participate on the local emergency planning committee (LEPC) as a facility emergency response coordinator</p> <p>4.4.2.3 The owner or operator of a facility subject to this section shall inform the LEPC of any changes occurring at the facility which may be relevant to emergency planning.</p> <p>4.4.2.4 Upon request of the local emergency planning committee, the owner or operator of a facility subject to this section shall promptly provide to the LEPC any information necessary for development or implementation of local emergency plan.</p>
<p>40CFR355.30(e)</p>	<p>4.4.3 Calculation of threshold planning quantities (TPQs) for solids and mixtures</p> <p>4.4.3.1 If a container or storage vessel holds a mixture or solution of an extremely hazardous substance, then the concentration of extremely hazardous substance, in weight percent (greater than 1 percent), shall be multiplied by the mass (in pounds) in the vessel to determine the actual quantity of extremely hazardous substance therein</p> <p>4.4.3.2 Extremely hazardous substances that are solids are subject to either of two threshold planning quantities as shown in appendices A and B of 40CFR 355 (i.e., 500 or 10,000 pounds). The lower quantity applies only if the solid exists in powdered form and has a particle size less than 100 microns⁹; or is handled in solution¹⁰ or in molten form¹¹; or meets the criteria for an NFPA rating of 2, 3 or 4 for reactivity. If the solid does not meet any of these criteria, it is subject to the upper (10,000 pound) threshold planning quantity as shown in appendices A and B of 40CFR355.</p>
<p>DOE O151.1A, Chapter IV, 3b(5)</p>	<p>4.4.4 Provisions shall be established to adequately assess the potential or actual on and offsite consequences of an emergency. Consequence assessments shall (a) be timely throughout the emergency; (b) be integrated with the event classification and protective action process; (c) incorporate monitoring of specific indicators and field measurements; and (d) be coordinated with Federal, State, local, and Tribal organizations.</p>
<p>DOE O151.1A, Chapter IV, 4b</p>	<p>4.4.5 A formal exercise program shall be established to validate all elements of the emergency management program over a multi-year period. Each exercise shall have specific objectives and shall be fully documented. Exercises shall be evaluated using an established critique process. Corrective actions shall be identified and incorporated into the program.</p>

⁹ The 100 micron level may be determined by multiplying the weight percent of solid with a particle size less than 100 microns in a particular container by the quantity of solid in the container.

¹⁰ The amount of solid in solution may be determined by multiplying the weight percent of solid in the solution in a particular container by the quantity of solution in the container.

¹¹ The amount of solid in molten form must be multiplied by 0.3 to determine whether the lower threshold planning quantity is met.

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DOE 0151.1A, Chapter IV, 3.b(4)	<p>4.4.6 Provisions shall be established for prompt initial notification of workers and emergency response personnel and organizations, including appropriate DOE and NNSA elements and other Federal, State, Tribal, and local organizations. Provisions shall also be established for continuing effective communication among the response organizations throughout an emergency</p> <p>4.4.6.1 Adherence to notification and reporting requirements shall be demonstrated in all emergency management exercises.</p> <p>4.4.6.2 Initial emergency notifications shall be made to workers, emergency response personnel, and organizations, including DOE and NNSA elements and other local, State, Tribal, and Federal organizations</p> <p>4.4.6.3 Notify State and local officials and the DOE or NNSA Field and Headquarters Emergency Operations Centers within 15 minutes and all other organizations within 30 minutes of the declaration of an Alert, Site Area Emergency, or General Emergency;</p> <p>4.4.6.4 Notify the DOE or NNSA Field and Headquarters Emergency Operations Centers within 30 minutes of the declaration of an other than hazardous material Operational Emergency; and</p> <p>4.4.6.5 Notify local, State, and Tribal organizations within 30 minutes or as established in mutual agreements for declaration of an other than hazardous material Operational Emergency</p> <p>4.4.6.6 Headquarters Watch Office staff in the Headquarters Emergency Operations Center and Headquarters Emergency Management Team personnel shall be responsible for the following:</p> <ul style="list-style-type: none"> • Record incoming verbal notifications, receive emergency event information by other data transmission means or mechanisms, and disseminate such information to Cognizant Secretarial Officer representatives and appropriate Headquarters organizations of other Federal agencies. • Facilitate communications among Headquarters organizations, DOE and NNSA field organizations, and contractor personnel. <p>4.4.6.7 Emergency status reports shall be forwarded to the next -higher Emergency Management Team on a continuing basis until the emergency is terminated.</p> <p>4.4.6.8 Effective communications methods shall be established between event scene responders, emergency managers, and response facilities.</p>
DOE O151.1A, Chapter III, C(8) 40CFR 68.95(a)(2) DOE O151.1A, Chapter IV, 9.c 29CFR1910.120 (q)(10)	<p>4.5 Emergency Equipment and Facilities - Provision of facilities and equipment adequate to support emergency response, including:</p> <ul style="list-style-type: none"> • the capability to notify employees of an emergency to facilitate the safe evacuation of employees from the work place, immediate work area, or both; and • operable personal protective equipment and clothing (PPE) to be used by organized and designated HAZMAT team members, or to be used by hazardous materials specialists. PPE shall meet the needs determined by the hazards assessment and the requirements noted in sections 4.5.1 through 4.5.5, below.
29CFR1910.120 (g)(3) (i) & (ii)	<p>4.5.1 PPE shall be selected and used which will protect employees from the hazards and potential hazards they are likely to encounter as identified during the emergency characterization and analysis.</p>
29CFR1910.120 (g)(3)	<p>4.5.2 Positive pressure self-contained breathing apparatus, or positive pressure</p>

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(iii)	air-line respirators equipped with an escape air supply shall be used when chemical exposure levels present will create a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.
29CFR1910.120 (g)(3) (iv))	4.5.3 Totally-encapsulating chemical protective suits (protection equivalent to Level A protection as recommended in Appendix B of 29CFR1910.120) shall be used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.
29CFR1910.120 (g)(4)	4.5.3.1 Totally encapsulating suits shall be capable of maintaining positive air pressure, and preventing inward test gas leakage of more than 0.5 percent ¹⁴ .
29CFR 1910.120 () () 29CFR 1910.120, Appendix B	4.5.4 The level of protection provided by PPE selection shall be increased when additional information or emergency conditions show that increased protection is necessary to reduce employee exposures below permissible exposure limits and published exposure levels for hazardous substances and health hazards. (See Appendix B of 29CFR1910.120 for guidance on selecting PPE ensembles.) Exception: The level of employee protection provided may be decreased when additional information or site conditions show that decreased protection will not result in hazardous exposures to employees.
29CFR1910.120 (g)(3) (vi) & (g)(5) NFPA 471, Chapter 5 ¹⁵	4.5.5 Personal protective equipment shall be selected and used to meet the requirements of 29 CFR Part 1910, Subpart I, and additional requirements including: <ul style="list-style-type: none"> • PPE selection based upon site hazards, • PPE use and limitations of the equipment, • Work mission duration, • PPE maintenance and storage, • PPE decontamination and disposal, • PPE training and proper fitting, • PPE donning and doffing procedures, • PPE inspection procedures prior to, during, and after use, • Evaluation of the effectiveness of the PPE program, and • Limitations during temperature extremes, heat stress, and other appropriate medical considerations.
DOE O151.1A, Chapter III, 3.c (6) 40CFR68.95(a)(1)(ii)	4.6 Medical Support <ul style="list-style-type: none"> • Medical treatment and planning for mass casualty situations shall be provided in accordance with DOE O 440.1A. • Internal medical consultation and surveillance shall be as noted in sections 4.6.1 through 4.6.8, below.
29CFR1910.120(q)(9)(i)	4.6.1 Members of an organized and designated HAZMAT team and hazardous materials specialists shall receive a baseline physical examination which shall be

¹⁴ See Appendix A of 29CFR1910.120 for a test method which may be used to evaluate this requirement.

¹⁵ NFPA 471 Chapter 5, has additional details on personal protective equipment requirements including four levels protection: A – when highest level of respiratory, skin, and eye protection is required; B – when the highest respiratory protection is required, but lesser skin protection is needed; C – when the concentration of airborne contaminants is known and air purifying respirators are required; D – when only nuisance contamination exists. Note: There are numerous other NFPA requirements for PPE, many of which are cited in NFPA 471, Chapter 5, for example: NFPA 1500, 1981, 1982 regarding fire fighting clothing and equipment; also, NFPA 1991, 1992, and 1993 regarding protective clothing for hazardous chemical emergencies.

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	performed as described below in sections 4.6.2 through 4.6.8.
29CFR1910.1450(g)(1)(iii) NFPA 471, Chapter 8 ¹⁶	<p>4.6.2 Any emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency incident either immediately or subsequently and all employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response, shall be provided with medical consultation as follows:</p> <ul style="list-style-type: none"> • as soon as possible following the emergency incident or development of signs or symptoms; • at additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.
29CFR1910.120 (f)(4)	<p>4.6.3 Medical examinations required by section 4.6 shall include a medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site. The content of medical examinations or consultations made available to employees shall be determined by the attending physician. The guidelines in the Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities should be consulted.</p>
29CFR1910.1200(i)(2)	<p>4.6.4 Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity is necessary for emergency or first-aid treatment, the chemical manufacturer, importer, or employer shall immediately disclose the specific chemical identity of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The chemical manufacturer, importer, or employer may require a written statement of need and confidentiality agreement as soon as circumstances permit.</p>
29CFR1910.120 (f)(5)	<p>4.6.5 All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.</p>
29CFR1910.120 (f)(6) 29CFR1910.134	<p>4.6.6 The employer shall provide one copy of this standard and its appendices to the attending physician and in addition the following for each employee:</p> <ul style="list-style-type: none"> • a description of the employee's duties as they relate to the employee's exposures; • the employee's exposure levels or anticipated exposure levels; • a description of any personal protective equipment used or to be used; • information from previous medical examinations of the employee which is not readily available to the examining physician; and, • information required by 1910.134 (Respiratory Protection).
29CFR1910.120 (f)(7)	<p>4.6.7 The employer shall obtain and furnish the employee with a copy of a written opinion from the examining physician. The written opinion obtained by the employer shall <u>not</u> reveal specific findings or diagnoses unrelated to occupational exposure, but shall contain the following:</p> <ul style="list-style-type: none"> • the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use; • the physician's recommended limitations upon the employees assigned work; • the results of the medical examination and tests if requested by the employee;

¹⁶ NFPA 471, Chapter 8, addresses not only post-entry medical examination requirements, but also requires pre-entry, during entry, follow-up, and treatment procedures.

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	<p>and,</p> <ul style="list-style-type: none"> a statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.
<p>29CFR1910.120 (f)(8)</p> <p>29CFR1910.20</p>	<p>4.6.8 An accurate record of the medical surveillance required by this section shall be retained. This record shall be retained for the period specified and meet the criteria of 29 CFR 1910.20. The record required of this section shall include at least the following information:</p> <ul style="list-style-type: none"> the name and social security number of the employee; physicians' written opinions, recommended limitations and results of examinations and tests; any employee medical complaints related to exposure to hazardous substances; and, a copy of the information provided to the examining physician by the employer, with the exception of the standard and its appendices.
<p>DOE O151.1A, Chapter IV, 5b</p> <p>29CFR1910.120(q)(3) (ix)</p> <p>29CFR1910.120 (q)(11)</p> <p>29CFR1910.120(b) –(o)</p>	<p>4.7 Post-Incident Requirements – Predetermined criteria for termination of emergencies shall be established.</p> <p>4.7.1 After emergency operations have terminated, the IC shall implement appropriate decontamination procedures. If it is determined that it is necessary to remove hazardous substances, health hazards and materials contaminated with them (such as contaminated soil or other elements of the natural environment) from the site of the incident, the employer conducting the clean-up shall comply with one of the following:</p> <ul style="list-style-type: none"> meet all the requirements of paragraphs (b) through (o) of 29CFR1910.120 ; <p>OR</p> <ul style="list-style-type: none"> where the clean-up is done on plant property using plant or workplace employees, such shall have completed the training requirements of section 4.2 herein and other appropriate safety and health training made necessary by the tasks that they are expected to perform such as the use of personal protective equipment and decontamination procedures. employees All equipment to be used in the performance of the clean-up work shall be in serviceable condition and shall have been inspected prior to use by a qualified person.
DOE O151.1A, Chapter III, 5.b	4.7.2 Recovery shall include notifications associated with termination of an emergency and establishment of criteria for resumption of normal operations.
DOE O151.1A, Chapter IV,3.b(4)	4.7.3 Following termination of emergency response, and in conjunction with the Final Occurrence Report (see DOE O 232.1A), each activated Emergency Management Team shall submit a final report on the emergency response to the Emergency Manager for submission to the Director of Emergency Operations
DOE O 151.1A, Attachment 1, #11	4.7.4 Provide for investigation of emergency root cause(s) and corrective action(s) to prevent recurrence in accordance with Departmental requirements (e.g., see DOE O 225.1A and DOE 5480.19).
DOE O 151.1A, Attachment 1, #14	4.7.5 Respond to all external evaluation, appraisal, and assessment findings within 90 days of receipt of findings.